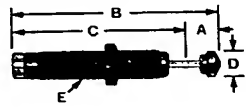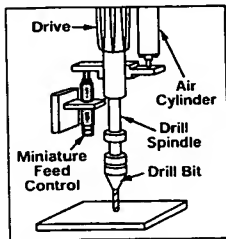## EXHIBIT B

Feed Controls & Air-Powered Springs

Miniature Feed Controls

Also known as velocity controls, these devices provide steady resistance and precise speed control (in one direction). They're often used with an air cylinder to control the advance of saw blades, cutters, and drill bits (see illustration at left). As the piston rod is compressed, hydraulic fluid is forced through an adjustable internal opening, creating consistent velocity control throughout the stroke. Turn the knob to adjust speed and force. All have a threaded body and hex jam nut for mounting. An internal spring returns the piston rod to its extended position. Cylinder and bumper are steel with a black-oxide finish. Piston rod is Type 440C stainless steel. Temperature range is 32° to 150° F.

Max. Force, lbs.	Stroke Lg. (A)	Speed @ Force Min.	Speed @ Force Max.	Extend. Lg. (B)	Comp. Lg. (C)	Bumper Dia. (D)	Thread Size (E)		Each
400	0.75"	1.6"/min. @ 30 lbs.	325"/min. @ 380 lbs.	4.67"	3.92"	0.66"	3/4"-16	3743K11	$64.32
800	1.00"	0.5"/min. @ 40 lbs.	400"/min. @ 800 lbs.	5.62"	4.62"	0.9"	1"-12	3743K12	99.50
800	1.58"	0.5"/min. @ 40 lbs.	400"/min. @ 800 lbs.	7.44"	5.86"	0.9"	1"-12	3743K13	140.82

Air-Powered Springs

Inflation Valve
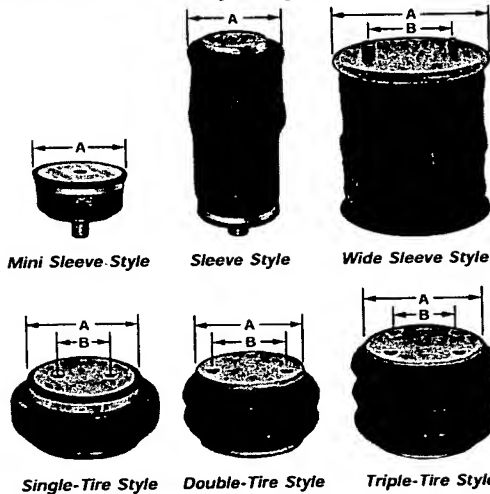
Inflate these high-strength, flexible rubber springs with compressed air and use them for either controlling vibration or lifting/moving an object. They're made of either rubber sleeves or "tires" with corrosion-resistant metal retainers at each end (wide-sleeve styles have a mounting flange on the bottom). Springs can also be filled with water or antifreeze solution. Maximum pressure is 100 psi. Air-powered springs are made of neoprene rubber and have a temperature range of –20° to +135° F, unless noted.

For vibration control, the air pressure in the springs serves as an energy-absorbing medium to provide maximum vibration and shock isolation, load leveling, and height control. The springs isolate more than 95% of vibration caused by a force frequency of 400 cycles/minute, and more than 99% above 800 cycles/minute. Loads and height can be varied by adding or exhausting air. Springs require an *inflation valve* (sold separately below) when used for vibration control.

For lifting/moving applications, the air pressure in the springs exerts the force needed to produce a stroke for lifting, pushing, gripping, compacting, and tensioning.

Sleeve styles offer superior vibration isolation. Installation may require additional lateral support. Springs need at least 10 psi of pressure to support loads (wide sleeve style needs at least 5 psi).

Tire styles provide lower compressed height and do not require a minimum pressure. They need external stops to prevent overcompression.

To pick the right air-powered spring for vibration control applications: Look at the max. force of the spring when fully extended and fully compressed; the spring needs to carry the whole weight of your load. Max. OD is also important—the entire spring needs clearance around it.

To pick the right air-powered spring for lifting/moving applications: The spring's force when fully extended needs to be at least as much as the weight of your load. The usable stroke is the travel the spring provides.

Mini Sleeve Style **Sleeve Style** **Wide Sleeve Style**

Single-Tire Style **Double-Tire Style** **Triple-Tire Style**

Additional Information: For additional information about these products, including mounting dimensions, performance data, and schematics, go to our web site, www.mcmaster.com, and search for 9538KAC, or fax us at 630-782-2800 and request 9538KAC.

Usable Stroke	Fully Extended Max. Force, lbs.@100 psi	Fully Extended Extend. Ht.	Fully Compressed Max. Force, lbs.@100 psi	Fully Compressed Comp. Ht.	Max. OD @ 100 psi	Dia. (A)	Mounting Holes Ctr.-to-Ctr. (B)	Mounting Holes Thread Size×Dp.	Pipe Size, NPTF (Dryseal)	Air-Powered Springs Each	Inflation Valves Each
Mini Sleeve Style											
2.1"	120	3.6"	600	1.5"	3.6"	3.4"		5/16"-18 × 7/16"	1/8"	9538K21 $71.64	9538K41 $11.42
Sleeve Style											
4"	560	6.25"	1,250	2.2"	5.6"	5.1"		3/8"-16 × 1/2"	1/8"	9538K22 97.52	9538K41 11.42
4.4"	110	8"	360	3.6"	3.3"	2.8"		3/4"-16 × 5/8"	1/8"	9538K23 89.08	9538K41 11.42
4.9"	310	7.1"	1,100	2.2"	4.6"	4.1"		3/8"-16 × 1/2"	1/8"	9538K24 91.64	9538K41 11.42
5.5"	800	9.5"	950	4"	5.6"	4.1"		3/4"-16 × 5/8"	1/8"	9538K28 92.88	9538K41 11.42
6.5"	540	10.5"	850	4"	4.6"	4.1"		3/4"-16 × 5/8"	1/8"	9538K25 96.40	9538K41 11.42
6.5"	750	10.5"	1,100	4"	5.6"	5.1"		3/4"-16 × 5/8"	1/8"	9538K26 98.66	9538K41 11.42
6.8"	1,200	10.9"	2,000	4.1"	6.8"	6.3"		M20-2.5 × 10 mm	1/8"	9538K27 150.57	9538K41 11.42
Wide Sleeve Style											
9.1"	2,400	13.5"	8,600	4.4"	12.7"	9"	5.5"	1/2"-13	1/4"	4324T14•★■ 297.52	9538K42 11.25
11"	2,300	17.1"	7,900	6.1"	11.7"	9"	6.2"	1/2"-13	1/4"	4324T15•★■ 311.04	9538K42 11.25
12"	2,100	20.1"	7,300	8.1"	11"	9"	4.76"	1/2"-20	1/4"	4324T13•★■ 326.56	9538K42 11.25
13"	Not Rated	18.6"	5,000	5.6"	8.7"	7.7"	3.38"	1/2"-20	1/4"	4324T11•★■ 229.15	9538K42 11.25
14.1"	2,100	20.1"	7,300	6"	11"	9"	4.76"	1/2"-20	1/4"	4324T12•★■ 298.10	9538K42 11.25
Single-Tire Style											
2"	560	3.8"	1,500	1.8"	5.7"	3.4"	1.75"	3/8"-16 × 5/8"	1/4"	9539K41 108.10	9538K42 11.25
2"	1,500	5.9"	5,600	3.2"	11"	6.4"	3.5"	3/8"-16 × 5/8"	1/4"	9539K44• 271.89	9538K42 11.25
2.8"	850	4.8"	2,000	2"	6.5"	4.2"	1.75"	3/8"-16 × 5/8"	1/4"	9539K55• 125.66	9538K42 11.25
2.9"	1,500	5.9"	5,600	2.3"	11"	6.4"	3.5"	3/8"-16 × 5/8"	1/4"	9539K43 119.00	9538K42 11.25
3"	520	4.8"	1,600	1.8"	6"	3.4"	1.75"	3/8"-16 × 5/8"	1/4"	9539K48• 289.86	9538K42 11.25
3"	3,600	7.2"	9,143	2.6"	13.2"	9"	6.2"	3/8"-16 × 5/8"	1/4"	9539K46 127.06	9538K42 11.25
3.2"	850	5.2"	2,600	2"	7.7"	4.2"	1.75"	3/8"-16 × 5/8"	1/4"	9539K47 121.46	9538K42 11.25
3.3"	1,100	5.3"	3,800	2"	8.7"	5"	2.75"	3/8"-16 × 5/8"	1/4"	9539K49 147.20	9538K42 11.25
3.4"	750	7.1"	3,000	2"	7"	4.2"	1.75"	3/8"-16 × 5/8"	1/4"		
Double-Tire Style											
4.5"	580	7.7"	2,800	2.8"	6.5"	4.2"	1.75"	3/8"-16 × 5/8"	1/4"	9551K51 159.11	9538K42 11.25
6.1"	2,700	11.1"	9,400	3.4"	13"	9"	6.2"	3/8"-16 × 5/8"	1/4"	9551K53• 285.50	9538K42 11.25
6.3"	1,100	10.8"	5,700	3.2"	10.3"	6.4"	3.5"	3/8"-16 × 5/8"	1/4"	9551K52• 248.37	9538K42 11.25
6.9"	1,000	10.1"	5,000	2.9"	8.8"	5"	2.75"	3/8"-16 × 5/8"	1/4"	9551K54 189.81	9538K42 11.25
7.2"	1,500	12.2"	6,000	3.5"	10.3"	6.4"	3.5"	1/2"-13	1/4"	9551K55•★ 262.50	9538K42 11.25
8.4"	2,600	14.4"	10,000	4.3"	13.7"	9"	6.2"	3/4"-16 × 5/8"	1/4"	9551K56• 301.68	9538K42 11.25
Triple-Tire Style											
10.2"	4,700	18"	15,200	5"	15.5"	11.3"	6.25"	3/8"-16 × 5/8"	1/4"	9551K57• 506.83	9538K42 11.25

• Made of natural rubber. Temperature range is –56° to +135° F.   ★ Springs have threaded mounting studs rather than holes.
■ Ctr.-to-ctr. dimension shown is from center of stud to center of air inlet.

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